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BEFORE THE FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C.

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In the Matter of

FCC Docket No. 92-235
"Spectrum Refarming"

Comments of the

Oregon Department of
Human Resources
Health Division

INTRODUCTION

By way of Docket 92-235 ("the docket"), the Federal Communications Commission has proposed radical revisions to the use of spectrum below 500 MHz. A significant portion of this spectrum is devoted to essential public safety services (police, fire and special emergency radio services). The ostensible purpose of the docket, known colloquially as "spectrum refarming", is to create additional radio channels in this segment of the spectrum, to relieve overcrowding in metropolitan areas of the country where spectrum overcrowding is currently a problem.

The Oregon Health Division submits that the adoption of the docket would have a devastating, negative, long-term effect on its constituent providers of emergency medical services ("EMS") and indeed upon the entire public safety community. The docket would essentially mandate a complete replacement of all base, mobile, and portable radios currently in service, by

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deadlines that are wholly unrealistic for governmental agencies.¹

Moreover, the limits on effective radiated power and antenna height proposed in the docket, while perhaps feasible or acceptable in a commercial or common carrier market, are fraught with danger when applied to public safety communications.

In fact, a reading of the docket by a non-technical user leads to the inescapable conclusion that there are only two beneficiaries to the implementation of that which is proposed - radio users in densely populated metropolitan areas and manufacturers and vendors of radio communications equipment. A more cynical reading of the proposal could lead to the conclusion that its authors are completely without expertise in the area of public safety communications, and are attempting to blithely translate concepts relevant to commercial systems into this unique and vital arena.

As to the needs of metropolitan area users for more channels, there exists a ready solution to their need for spectrum. There are, and will continue to be, significant portions of the spectrum allocated for television broadcast use which could be utilized for radio communications. These "TV bands" (e.g., 470-490 MHz and 500-512 MHz) have been utilized on a limited basis in some metropolitan areas, and more spectrum is available if the Commission is willing to take it away from the commercial television users.

¹Equipment to meet these requirements currently does not exist. See infra.

As to the vendors, it is simply unconscionable for the Commission to mandate that public agencies, operating within tight fiscal constraints identical or worse than those faced by the Commission itself, discard perfectly functional radio equipment in order to line the pockets of the manufacturers. Quite simply, the docket represents a federally mandated windfall for those who, wittingly or unwittingly, have helped to create the overcrowding that this docket is designed to relieve.

These concerns are of greater significance for the rural states and communities that make up the majority of the land mass of the United States. Even if the economic issues could be addressed (which is unlikely), the scheme proposed in the docket is based on unreliable data and will not provide a sufficient volume of reliable, safe communications capacity to serve our needs.

Finally, the timeframes proposed for implementation of changes proposed in the docket are unreasonably short. Given that the myriad technical issues described below can be addressed, any change with attendant costs (perhaps in the hundreds of millions of dollars) such as this proposal carries should be phased in over a minimum of fifteen or twenty years. To propose a short (e.g., 3-5 year) phase in guarantees either significant numbers of systems that will be forced to operate illegally or, even worse, the unnecessary creation of dangerous gaps in public safety communications system that will jeopardize

life and property.²

The Oregon Department of Human Resources - Health Division urges that the Commission reject Docket 92-235 and direct that staff forthwith revisit the issues addressed herein with greater sensitivity to the economic and practical realities facing those users of radio spectrum whose sole reason for existence is to serve the public, and that the realities of radio communication in the rural and frontier areas of North America be considered in all aspects of system planning.

SPECIFIC AREAS OF CONCERN

- 1. The Proposed 5 kHz Channel Spacing Would Effectively Reduce, Rather Than Increase, the Number of Channels Available to Public Safety Radio Users, and Have Other Negative Impacts on Public Safety**

First, it has been reliably established that Commission staff erred by some 70% in their projections concerning public safety communications requirements through the year 2000. See Comments of the Associated Public Safety Communications Officers,

²Parenthetically, the Commission should look closely at the vast quantity of spectrum allocated for but not used by the federal government. The underlying assumption, that it is appropriate for spectrum to lie unused "just in case" the federal government needs it is fundamentally wrong. Much of the federal spectrum is used for purposes directly analogous to state and local functions - policing highways, combatting fires, and providing emergency aid. However, federal agencies such as the U.S.D.A. Forest Service, the National Parks Service, and various federal law enforcement agencies enjoy virtually unlimited frequency availability, while their state and local colleagues find their needs unmet. A major overhaul of the statutes and policies that permit this situation to exist is in order.

Inc. to FCC Docket 92-232. Any analysis of a proposed spectrum allocation scheme using this data is fatally flawed from the outset.

a. Reduction of Channel Availability

The docket obviously contemplates that users of systems will move toward multiple-site integrated low-power systems, much like the pseudo-cellular systems utilized by European communications agencies.

This approach cannot be adopted in the United States, particularly the western United States, without users incurring exorbitant costs (see infra). The United States is not like Europe in many ways - geography is different, public safety services are delivered differently, and distances are infinitely shorter. Europe is without rural areas akin to the "frontier" that exists west of the Mississippi; "European solutions" will not fit the needs of the North American public safety communities.

The docket contemplates a 23% reduction of the spectrum presently allocated to public safety (-0.71 MHz). While a theoretical 464 "channels" will be created, equipment will not be available in the foreseeable future to permit them to be used.³ Moreover, it will take a minimum of 10 to 15 years for the

³Equipment available today will only be able to utilize one of every 3 or every 5 of the contemplated channels, reducing the number of useable channels to 93 or 155.

prototypical state or local government to finance the implementation of a system complying with the new mandates required by this proposal. Moreover, for technical reasons beyond the expertise of this agency, this mathematical analysis understates the problem, because the proposed narrow bandwidth will require higher power of approximately 20% to produce similar quality communications, etc., etc. As users, we need more and better, not less and worse.

b. Incompatibility With Federal Specifications

The 150-174 MHz radio band ("the hi-band") is the portion of the spectrum most likely to be utilized for the coordination of activities involving a mix of federal and state agencies. Virtually every local, county, state, and federal agency providing emergency services (law enforcement, fire suppression, emergency medical services, emergency management, radiation control, disaster relief, border security, marine safety and enforcement, defense, etc.) operate in the hi-band. Across the nation, representatives of these and other agencies have struggled, for years, to develop and maintain interoperability of their lifesaving systems.

The Federal government, through NTIA, has adopted channel separation standards which require channel separation of 12.5 kHz and 6.25 kHz, respectively. The 5kHz standard proposed in the docket will mandate that state and local users purchase and utilize equipment that is incompatible with that of their federal

counterparts. Moreover, because manufacturers will have to comply with two standards, both federal and non-federal users will pay more than necessary for their equipment.

Finally, the docket contains insufficient and undefined mutual aid channels to meet existing needs. If implemented, the docket will negate by rendering obsolete and unusable the numerous caches of radios procured and maintained at great expense across the country. As examples, the Boise Interagency Fire Cache, relied upon by all state and federal wildfire agencies, contains 8,000 radios - all rendered useless by the adoption of Docket 92-235!

Even worse, state public safety communications plans developed over the last 20 years (often at the behest of the federal government; e.g., state EMS communication plans, the National Law Enforcement Emergency Assistance Network, etc.) will also be rendered obsolete. Any "faith" by which federal operating agencies induce their state counterparts to develop joint plans and participate in "systems approaches" will be destroyed by this mandate. The efforts of APCO and a myriad of agencies to assure "system interoperability" will be defeated.

2. The Reductions in Transmitter Output Power Will Effectively Destroy Many Existing Public Safety Communication Systems and Will Require Additional, Inefficient Spectrum Use.

Public safety radio is inherently different from commercial or common carrier radio use. Occasional gaps in coverage, dead spots, and poor reception are mere inconveniences or economic

disincentives in a "convenience" communications system. When public safety is involved, such deficiencies rise to the level of "life threats" which jeopardize the well-being of both public servants and the citizens they serve.

"Officer safety" issues drive the development of communications systems in rural areas. Where in more urban areas channel loading and the need for data transmission drive the demand for service, the overriding concern in rural areas is the need of the individual officer (law enforcement, fire service, or emergency medical service) to communicate with other system resources (backup law enforcement or fire suppression assistance; physician direction, etc.). Rural public safety providers rely on their radios to "call for help" in emergent circumstances in which gaps in service simply cannot be tolerated.

Given the economic constraints in which state, county and local governments operate today, the docket's mandate will result in significant communications needs going unmet. Those "unmet needs" mean tower sites not built, areas without communications, and direct and proximate danger to the lives of public safety officers and those they serve. In a nutshell, nobody can afford to build systems that would comply with Docket 92-235 and still meet their needs for efficient, reliable communications.

3. **The Prohibition on Mobile Relay or "Repeater" Operations in the 150-174 MHz Band Will Require the Complete Re-engineering of Many Public Safety Radio Systems, and Will Require Additional, Inefficient Spectrum Use**

Make no mistake about it - wide-area public safety radio systems means mobile relays! Thousands of local, regional, county, and state radio networks rely on "repeaters" to assure that one mobile unit can communicate with one or several other mobile units. This is an essential ability for public safety users, and is often recognized by those who equate public safety communications with commercial radio systems such as SMR and cellular telephone. A police officer, firefighter, or paramedic must be able to instantly and reliably communicate with multiple other mobile units within a service area, and the mobile relay or repeater is the only feasible alternative! One-to-one mobile to base or mobile to mobile communications are emphatically not enough to assure that the safety of life and property is protected.

Unless Commission staff is possessed of a "rabbit in the hat" that users are unaware of, the need for mobile relay operations is greater than ever and increasing all the time. Elimination of mobile relays in the 150-174 MHz band is preposterous; if anything the Commission should increase the allocation of frequency pairs for mobile relay use.

4. **The Small, "Cellular" Type Systems Contemplated By Docket 92-235 Are Inappropriate for Wide-Area Public Safety Communications Applications**

The vast territories protected by public safety agencies in larger, more rural states do not lend themselves to the "cellular" or "mini-system" approach. This is true primarily due to the high cost of creating the multiple tower sites required for low-power operations. This problem is exacerbated in areas which are without wireline communications to feed tower sites, which are in turn in many cases not even served by an electrical generating system!⁴ The only alternatives available will involve (a) the use of more discrete frequencies by agencies, or (b) connection of tower sites by channel-intensive microwave systems which require spectrum of their own; the cost of either of which is astronomical. To suggest that agencies in rural Oregon will spend the amount necessary to create the dozens of tower sites necessary to insure reliable coverage over the vast, mostly unpopulated areas they protect is simply preposterous! Even if they desired to do so, economic realities would preclude the necessary expenditures.

⁴The concept of a solar-powered tower site, with storage batteries and propane fuel flown in from time to time may be foreign to someone with an urban system planning focus.

5. Equipment is Not Presently Available to Meet the New Requirements; Even If Equipment Becomes Available Acquisition By Governmental Users In the Near Future Will Be Impossible.

No agency, public or private, can today go to a radio vendor and buy equipment which complies with the mandates of the docket. In the near future, it is unlikely that such equipment will become available; certainly not in the price range that already strapped government agencies will be able to afford. It is all good and well for engineers and regulators to design "the system of the future" but, when lives hang in the balance, progress mandated by force of law should be approached carefully.

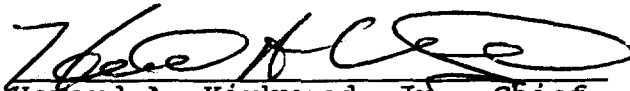
The mandates of Docket 92-235 will, if implemented and complied with, force many necessary radio systems off the air. The direct and proximate result of this happening will be loss of life and property, increased danger to officers, and a host of other serious consequences. It is already difficult to get the necessary permits to build tower sites on remote, protected land (usually under the jurisdiction of some other federal agency that does not want towers built on its territory.

Federal regulators must carefully consider the economic consequences of their proposals before they make broad, sweeping changes - and they must certainly consider whether or not what they propose can ever actually be done.

CONCLUSION

For the foregoing reasons, the rules proposed by Federal Communications Commission Docket 92-235 should be rejected. Future proposals of this nature should be developed from a perspective of greater sensitivity to the needs of those who will ultimately be impacted by the rules which are proposed.

Respectfully submitted,


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